



# SPEC® CINT2006 Result

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Tyan

(Test Sponsor: Advanced Micro Devices)

SPECint®\_rate2006 = NC

Tyan Thunder n425QE (S4985E), AMD Opteron 8360 SE

SPECint\_rate\_base2006 = NC

CPU2006 license: 49

Test sponsor: Advanced Micro Devices

Tested by: Advanced Micro Devices

Test date: Sep-2007

Hardware Availability: Dec-2007

Software Availability: Oct-2007

**SPEC has determined that this result was not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the submitter reported that the result would not meet the 3 month availability requirement in the SPEC CPU2006 run rules due to a change in the availability date of the processor.**

	Copies
400.perlbench	
401.bzip2	
403.gcc	
429.mcf	
445.gobmk	
456.hmmer	
458.sjeng	
462.libquantum	
464.h264ref	
471.omnettp	
473.astar	
483	

**Non-Compliant**

### Hardware

CPU Name: AMD Opteron 8360 SE  
 CPU Characteristics:  
 CPU MHz: 2500  
 FPU: Integrated  
 CPU(s) enabled: 16 cores, 4 chips, 4 cores/chip  
 CPU(s) orderable: 2,4 chips  
 Primary Cache: 64 KB I + 64 KB D on chip per core

Continued on next page

### Software

Operating System: SuSE Linux Enterprise Server 10 SP1 64-bit kernel  
 Compiler: The Portland Group (PGI)  
 PGI pgcc 7.1-0 C Compiler  
 PGI pgCC 7.1-0 C++ Compiler  
 The PathScale Compiler v3.0  
 PathScale pathcc 3.0 C Compiler  
 PathScale pathCC 3.0 C++ Compiler

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Secondary Cache: 512 KB I+D on chip per core  
L3 Cache: 2 MB I+D on chip per chip  
Other Cache: None  
Memory: 32 GB (16x2GB, DDR2-667 CL5 Reg Dual Rank)  
Disk Subsystem: 1x250GB SATA, 7200 RPM  
Other Hardware: None

Auto Parallel: No  
File System: ReiserFS  
System State: Multi-user, run level 3  
Base Units: 32/64-bit  
Peak Powers: 32/64-bit  
Other Software: SmartHeap 8.0 32-bit Library for Linux

## Result Table

Benchmark	Base								Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
400.perlbench	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC		
401.bzip2	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC		
403.gcc	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC		
429.mcf	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC		
445.gobmk	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC		
456.hmmer	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC		
458.sjeng	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC		
462.libquantum	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC		
464.h264ref	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC		
471.omnetpp	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC		
473.astar	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC		
483.xs	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC		

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Operating System Notes

'ulimit -s unlimited' used to set environment stack size  
'ulimit -l 4915200' was used to set environment lock pages quantity  
'numactl' was used to bind copies to the cores  
Set vm/nr\_hugepages=2400 in /etc/sysctl.conf  
mount -t hugetlbfs nodev /mnt/hugepages  
Environment variable PGI\_HUGE\_PAGES set to 150



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## General Notes

The tested system can be assembled using a PC Power & Cooling T1KWSR 1000W Turbo-Cooler 12V power supply.

## Base Compiler Invocation

C benchmarks:

pgcc

C++ benchmarks:

pgcpp

## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64  
401.bzip2: -DSPEC\_CPU\_LP64  
403.gcc: -DSPEC\_CPU\_LP64  
429.mcf: -DSPEC\_CPU\_LP64  
445.gobm: -DSPEC\_CPU\_LP64  
456.hmm: -DSPEC\_CPU\_LP64  
458.sjeng: -DSPEC\_CPU\_LP64  
462.libquantum: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX  
464.h26ref: -DSPEC\_CPU\_LP64  
483.lbm: -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:

-fast -Mipa=fast -Mipa=inline -Mipa=noarg -Mfprelaxed  
-Msmartalloc=huge:840 -tp barcelona-64 -Bstatic\_pgi

C++ benchmarks:

-fastsse -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc=huge:448  
--zc\_eh -tp barcelona -Bstatic\_pgi



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## Base Other Flags

C benchmarks:

-w

C++ benchmarks:

-w

## Peak Compiler Invocation

C benchmarks (except as noted below):

pgcc

400.perlbench: pathcc

403.gcc: pathcc

445.gobmk: pathcc

464.h264ref: pathcc

C++ benchmarks (except as noted below):

pgcpp

483.xalancbmk: pathCC

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64

401.bzip2: -DSPEC\_CPU\_LP64

445.gobmk: -DSPEC\_CPU\_LP64

456.hmmer: -DSPEC\_CPU\_LP64

458.sjeng: -DSPEC\_CPU\_LP64

462.libquantum: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX

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## Peak Portability Flags (Continued)

464.h264ref: -DSPEC\_CPU\_LP64  
483.xalanbmk: -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

400.perlbench: -fb\_create fbdata(pass 1) -fb\_opt fbdata(pass 2) -Ofast  
-LNO:opt=0

401.bzip2: -Mpfi(pass 1) -Mpfo(pass 2) -fast -O4  
-Msmartalloc=huge:448 -tp barcelona-64 -Bstatic\_pgi

403.gcc: -fb\_create fbdata(pass 1) -fb\_opt fbdata(pass 2) -m32 -O3  
-OPT:fast

429.mcf: -fastsse -Mipa=fast -Mipa=inline:1 -Msmartalloc=huge:420  
-tp barcelona -Bstatic\_pgi

45.gobmk: -fb\_create fbdata(pass 1) -fb\_opt fbdata(pass 2) -O3  
-OPT:alias=disjoint -LNO:simd=0 -LNO:minvariant=off  
-Mipr:retype\_expr=on

-fast -Msmartalloc=huge:448 -Mfprelaxed -Msafeptr  
-Mipa=const -Mipa=ptr -Mipa=arg -tp barcelona-64  
-Bstatic\_pgi

442.fjeng: -Mpfi(pass 1) -Mipa=fast(pass 2) -Mipa=inline:1(pass 2)  
-Mipa=noarg(pass 2) -Mpfo(pass 2) -fast  
-Msmartalloc=huge:448 -Mfprelaxed -tp barcelona-64  
-Bstatic\_pgi

462.libquantum: -fast -Mfprelaxed -Msmartalloc=huge:448 -Munroll=m:4  
-Mipa=fast -Mipa=inline -Mipa=noarg -Bstatic\_pgi

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## Peak Optimization Flags (Continued)

464.h264ref: -fb\_create fbdata(pass 1) -fb\_opt fbdata(pass 2) -O3  
-IPA:plimit=20000 -OPT:alias,disjoint -LNO:prefetch=0

C++ benchmarks:

471.omnetpp: basepeak = yes

473.astar: basepeak = yes

483.xalancbmk: -Ofast -m32 -O3 -funroll-times\_max=8  
-L/cpu2006/workdir/2007/SmartHeap -lsmartheap

## Peak Other Flags

C benchmarks (except as noted below):  
-w

400.perlbench: No flags used

403.gcc: No flags used

445.gcbmk: No flags used

445.gcc: No flags used

C++ benchmarks (except as noted below):

-w

483.xalancbmk: No flags used

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/amd814GH-flags.20090714.html>



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You can also download the XML flags source by using the following link:

<http://www.spec.org/cpu2006/flags/amd814GH-flags.20090714.xml>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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